DOCUMENT RESUME

ED 349 202 SO 022 275

AUTHOR Bobbett, Gordon C.; Bobbett, Nan C.
TITLE Musical Independence and Contributing Academic/Musical Experiences for Students in Good Rural Appalachian Schools.
PUB DATE 91
NOTE 30p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Lexington, KY, November 15, 1991).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS High Schools; Museums; Musical Instruments; *Music Education; *Rural Schools; Skill Development; Standardized Tests; Student Development; *Student Educational Objectives
IDENTIFIERS *Appalachia; Musical Independence

ABSTRACT

Using identified factors that affect students' musical outcomes, this research study examined how instrumental music students attending "good" rural Appalachian high schools compared to other instrumental students. "Good" refers to those 12 Appalachian rural school districts identified as the best out of 46 rural county school districts in Appalachian Tennessee and 32 county and 16 independent school districts in Appalachian Kentucky. Employing identified factors that affect students' musical outcomes, the study used the notion of "musical independence" to evaluate music outcomes. Musical independence was defined as the level at which an individual or organization required musical assistance. For example, a person who required much assistance in performing music would have low or moderate musical independence. The study had three specific purposes: (1) to evaluate the instrumental band students' musical independence (MI) at selected rural Appalachian high schools; (2) to compare students' MI level to their academic experiences, musical experiences, family environment, and practice/rehearsal activities; and (3) to develop musical independence benchmarks for instrumental students attending "good" rural Appalachian high schools. Band students at six rural Appalachian high schools participated in a two-part evaluation that involved administering the Instrumental Band Student survey (IBS) and Colwell's Music Achievement Test 3 (MAT3). The conclusions drawn from the study included: (1) socio-economic conditions are linked to students' musical outcomes; (2) Appalachian band directors and their instrumental students de-emphasize the promotion and development of musical skills; and (3) wasted student resources are an important educational issue. A 12-item reference list is included. (DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED349202

MUSICAL INDEPENDENCE AND CONTRIBUTING ACADEMIC/MUSICAL EXPERIENCES FOR STUDENTS IN GOOD RURAL APPALACHIAN SCHOOLS

Dr. Gordon C. Bobbett
Educational Consultant
8325 Richland Colony Rd.
Knoxville, TN 37923

Nan C. Bobbett
Musician, Certified Public Accountant
8325 Richland Colony Rd
Knoxville, TN 37996

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

+ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

GORDON C. BOBBETT

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Descriptors
Music
Evaluation
Rural Appalachian Schools

1991 Mid-South Educational Research Association (MSERA)
Annual Meeting
Lexington, KY

Discussion Session
Wednesday, November 15, 1991

SP 032 275

BEST COPY AVAILABLE

MUSICAL INDEPENDENCE AND CONTRIBUTING ACADEMIC/MUSICAL EXPERIENCES FOR STUDENTS IN GOOD RURAL APPALACHIAN SCHOOLS

I. INTRODUCTION

> Rural, small districts continue to be an important component of the public school enterprise in the United States. They are to be found in significant numbers . . .. Depending on how one defines them, they represent approximately two-thirds of the public school systems in the nation and are responsible for the education of from ***one-fourth*** to ***one-third*** of the public elementary/secondary school-age population. (Stephens,1988) (emphasis added)

Although rural school education is not a national "head-line" issue, the strengths and weaknesses of our rural schools impact national education goals, and ultimately, influence national student outcome benchmarks. As in most American schools, instrumental music is a course in the high school curriculum in rural schools. Although a student's musical growth is the sum and variety of their activities and experiences, which ones make a difference? To what extent do things such as students' home environment and/or academic/musical experiences influence their musical development?

This study sought to answer such general questions as: (1) How do instrumental band students attending "good"[1] rural Appalachian high schools compare to other instrumental students? (2) To what extent do instruction and activities/experiences such as home environment or participation in different school-related activities influence the student's musical outcomes? and (3) Can the activities/experiences that do influence student musical outcomes, be identified, organized, and weighted?

Many educational areas are referenced in the music research literature and educational conferences as classic "textbook" areas, such as time-on-task, the variety of musical/academic experiences, and home-related or environment areas such as parents' academic background or academic expectations (Bobbett, 1989, 1991). Although these areas are repeatedly cited, little is known regarding the relationships between these areas and the extent they relate to students' musical outcomes. In addition, other areas not commonly identified in the literature may have a meaningful impact on student outcome. A variety of new areas needs to be examined. Hopefully, research by "wandering around" or testing many related/unrelated activities may identify and organize areas not typically associated with student music outcomes.

---

1 The descriptor "good" is applied to these schools because the selection process attempted to identify the best rural Appalachian schools in the two states. It does not represent a judgment about the schools as a result of the study.

There is a subtle distinction between typical academic outcomes and instrumental music outcomes. Where conventional academic outcomes emphasize the mastery of cognitive skills, music independence combines cognitive skills with listening and psycho-motor skills. Simply, instrumental music outcomes relate to the act of performing. This study used the notion of "musical independence"[2] (MI) to evaluate such music outcomes.

This study used prior high school and college benchmarks (Bobbett, 1987) to compare the instrumental band students attending "good" rural Appalachian high schools with instrumental students in other studies. Bobbett (1987) evaluated outstanding and randomly selected high school instrumental students and programs in Tennessee. Later, Bobbett evaluated instrumental students and programs at a large Southeastern Conference university band program (1990c), and students and programs at a large mid-west university (1991). In the present study, the MI levels for the instrumental band students attending "good" rural Appalachian high schools were compared to those found in the three prior studies.

The study's **purposes** were to: (1) evaluate the instrumental band students' musical independence (MI) at selected rural Appalachian high schools, (2) compare students' MI level to their academic experiences, musical experiences, family environment, and practice/rehearsal activities, and (3) develop musical independence benchmarks for instrumental students attending "good" rural Appalachian high schools.

Superintendents and principals agreed to participate in the research project that studied "good" rural Appalachian high schools (Bobbett, et al,1990a), and the schools' band directors agreed to participate in the music research project.

II. DESIGN

The study's design consisted of two basic steps: (1) identifying good schools to be included in the study, and (2) developing a data base which could be used to describe Appalachian band students' MI and related activities/experiences. The band students (grades 9-12) at six rural Appalachian high schools participated in a two-part evaluation which involved administering: (1) the Instrumental Band Student survey (IBS) (see Appendix A), and (2) Colwell's Music Achievement Test 3 (MAT3).

---

2 **Musical Independence** is defined as the level at which an individual or organization requires musical assistance. A person who requires much assistance in performing music would have low or moderate musical independence. Conversely, an individual who requires little or no assistance would have high musical independence.

A. SCHOOL SELECTION

From 46 rural county school districts in Appalachian Tennessee and 32 county and 16 independent school districts in Appalachian Kentucky, the researchers selected and evaluated 12 "good" Appalachian rural school districts (Bobbett, 1990b). The Kentucky Chief State School Officer identified six "good" districts among the Kentucky districts. In Tennessee, the researchers selected six Tennessee districts based on their performance on five measures included in the Tennessee Report Card: student performance on state competency tests, ACT scores, dropout rate, percentage of students attending post-secondary institutions, and graduation rate. If the selected district in either state contained more than one high school, the district superintendent agreed to select the best high school in the district.

The Student Effectiveness Survey (SEI) (Bobbett, et al., 1990d) was developed to evaluate the perceptions of 16 educational outcomes (six academic, five work-related, and five personal). The researchers administered the SEI to 237 students, 158 teachers, and 64 business leaders in six Kentucky and six Tennessee rural Appalachian school districts. Each school's mean scores for both expectation and performance data were assessed, and each school's mean score difference between expectation and performance was calculated. The SEI perceptions and performance outcomes (ACT/SAT, dropout rate, etc.) were collectively evaluated. The field of schools was narrowed from 12 to 6 by evaluating (1) the SEI dissonance data (expectation minus performance) on a per school basis, and (2) the school's performance outcome data.

B. TEST INSTRUMENTS

1. **Instrumental Band Student Survey (IBS)** The IBS sought demographic information covering three areas: (1) general information, (2) family activities, and (3) academic/music activities.

a. General Information. The IBS's general information section included the student's band instrument, part played (i.e., 1st, 3rd, etc.), the number of years the student played in the band, gender, grade, amount of money spent on musical supplies, and ownership and quality of band instrument.

b. Family Activities. Students indicated whether they planned to attend college, mother's and father's academic experiences, and who they live with *(i.e., one parent, both parents, grandparents, or other)*. In addition, the students indicated the number of: (1) days they eat breakfast, (2) children in the family, (3) hours they watch television per night, (4) hours spent

helping parents around the house per week, (5) states they have visited, (6) hours they sleep per night, (7) minutes they spend traveling to school each morning, and (8) farthest number of miles traveled from their home.

c. Academic/Musical Activities. Instrumental band students participate in a many musical activities and are involved with a variety of musical experiences. The students indicated the number of years they played in a band, minutes they studied academic courses per night, and number of minutes they practiced their band instrument per day. The students also indicated the percentage of time they spent during school rehearsals and at home on scales, etudes, band music, sight-reading, and other (*i.e., home: adjusting reeds, using valve oil on brass instrument, etc.; school: taking role, fund-raising projects, passing out music, etc.).* In addition, the students indicated the number of years they participated in marching contests, concert festival, solo-ensemble, parades, solos in public, and ensemble performances in public. Finally, the students indicated the average number of: (1) days per week they practiced after school for marching contest, (2) days per week they practiced after school for the spring concert, (3) years they had private lessons, and (4) years they participated in church/community choir.

2. Colwell's Music Achievement Test 3 (MAT3)

The MAT3 was used for this project because it is an excellent musical independence test to evaluate high school students (Bobbett, 1987). Colwell (1970) used the Kuder Richardson 21 (KR21) to estimate the MAT3's internal consistency for grades 9-12. The KR21 ranged from 0.81 to 0.89 for students with instrumental experience. The MAT3 is an auditory test consisting of four subtests: (1) Tonal Memory, (2) Melody Recognition, (3) Pitch Recognition, and (4) Instrument Recognition.

The MAT3 is an appropriate test in terms of musical independence because the students utilized their cognitive skills to interpret the printed materials and their listening skills to discriminate between the test's many auditory examples. Colwell's MAT3 was used for this project because it evaluates the student's musical independence, is easily administered (*takes only 35 minutes to administer, which is less than a typical 50-minute class period*), and has previously determined reliability estimates and validity.

III. METHODOLOGY

There were seven questions related to this study:

1. What is the profile (band instrumentation, grade composition, instrument ownership, family activities, and academic/music activities) of the students and the band programs in "good" rural Appalachian high schools in Kentucky and Tennessee?
2. What music activities do students participate in during high school, and can these activities be organized, grouped, and weighted?
3. What is the level of musical independence for high school band students and programs in "good" rural Appalachian high schools in Kentucky and Tennessee?
4. What are the differences in MI between band students attending "good" rural Appalachian high schools and students in average or outstanding post-secondary instrumental programs?
5. To what extent do certain environmental influences or musical activities influence MI growth?
6. What practice activities, band rehearsal activities, and performance activities influence students' MI?
7. What are the distinguishing characteristics between "top", "middle", and "bottom" MI students?

In response to question #1, descriptive analysis and inferential analysis were used to evaluate the Instrumental Band Survey (IBS) data. *Mean scores* were developed for each of the IBS items. The *t-test* was used to compare home practice activities with band rehearsal activities.

To answer question #2, *mean scores* and *ranking* were developed for the six school performance activities and four other instrumental activities. Next, *Factor Analysis* was used to organize, group, and evaluate the 10 music activities that students participate in during high school.

Responding to research question #3, subtests and grand total mean scores were developed for the six schools, two states, and for students participating in band who attend "good" rural Appalachian high schools.

Research question #4 required the comparison of the students' MI level with the MI level of students in randomly selected and nominated programs (comparison of earlier MI research). The ANOVA, t-test, and Scheffe were used to evaluate the differences between each of the sub-groups. Histograms were developed to illustrate trends for the subtests and grand total MAT3 scores.

To answer study question #5, the Pearson Product Moment correlation was used to evaluate MAT3 with family areas and academic/music activities. Guttman's partial correlation was used to evaluate each area's level of contribution to the development of MI.

Responding to research question #6, the Pearson Product Moment correlation was used to evaluate each of the five home practice activities with the grand total MAT3 score, and each of the same rehearsal activities to the grand total MAT3 score. Guttman's partial correlation was used to identify and evaluate the positive and negative influences on MI.

In response to research question #7, the students' grand total MAT3 scores were divided into three subcategories which include: "top" MI students (*MAT3 scores larger than one standard deviation SD above the mean*), "average" MI students (*grand total MAT3 scores ranging between a positive one SD to a negative one SD*), and "bottom" MI students (*grand total MAT3 with more than a negative one SD*). The ANOVA and Scheffe were used to evaluate the differences between the three subgroups and the IBS items in each of the three survey categories (*general, family, and academic/music activities*).

IV. FINDINGS

The study's findings are grouped into five areas: (A) Descriptive Analysis (B) Subtests and Grand Total (GT) MAT3 scores/percentile scores, (C) Inferential Statistics: MAT3 data with survey data, and (D) Correlation Analysis.

A. DESCRIPTIVE ANALYSIS

1. General Information

Of the 211 students from six "good" rural Appalachian High schools that participated in the study, 46.7% played a woodwind instrument, 36.2% played brass, and 16.2% played percussion. Of these students, 55.4% played 1st part on their respective instrument, 25.6% played 2nd, 17.9% played 3d, and 1% played the 4th part. There were approximately the same number of males (50.2%) as females (49.2%) in the programs. There were 29.7% of the students in 9th grade, 31.1% in 10th grade, 24.9% in 11th grade, and 14.3% in the 12th grade.

The average student spent approximately $49 per year on supplies (*mode: $10*), which ranged from a low of $0 to a high of $200 per year (*i.e., 14.2% spent no money per year, 23.4% spent $10, 22.8% spent $25, 18.3% spent $50, 7.6% spent $100, 5.6% spent $150, and 8.7% spent more than $150 per year on band supplies and equipment*).

Thirty-eight percent of the students play on school-owned instruments, 61% play on their own instruments, and 1% play on rented instruments. Finally, 43% of the instruments played are

professional instruments (*i.e., a "top" or best band instrument available*), 33% on an intermediate instrument, and 24% play on a starter/beginner instrument.

2. Family Activities

Most of the students generally planned to pursue post-secondary education. When asked whether they planned to attend a four-year college, 82% of the students responded yes, 7% no, and 11% undecided. When asked whether they planned to attend a two-year vocational school, 75% responded yes, 8% no, and 16% undecided. Based on the responses, they generally aspired to post-secondary education.

The students' family, academic, and personal lives were probed. Fifty-four percent of both the fathers and mothers attended college; more of the fathers attended college for four years (53%) than mothers (42%). Note that the fathers completed four years of college 11% more than the mothers. Also, 22% of the students live with one parent, 77% live with both parents, and 1% indicated that they lived with someone else ("other").

The average respondent eats breakfast 4.2 days a week, has 2.5 children in the family, watches television 2.7 hours per day, helps the parents around the house 2.1 hours per day, sleeps 7.4 hours a night, and spends 20 minutes traveling to school per day.

The student's travel experience was examined. The average student has visited 7.7 states (*mode=7, range: 0 to 44*) and has traveled an average of 1,150 miles from where s/he is presently living (*range: 50 to 8,000*).

3. Academic/Music Activities

Time spent on academic/music activities was determined. The typical student participated 5.1 years in band (SD=1.6), studied 48 minutes a night on non-music courses (i.e., academic course work) (SD=25.6) and practiced 26 minutes a night on his/her band instrument (SD= 24.5). Note, that most students study 30-60 minutes per night (61%), but 50% of the students practiced 15 minutes or less a night.

The t-test was used to evaluate the variety of techniques the students employed during both home practicing and band rehearsal. Table 1 illustrates that practicing **band music** is the primary method (47%, 56%, respectively) by which students learn music during individual practice or band rehearsals. Note that **etudes** and **scales** (*i.e., the two activities that emphasize music fundamentals*) are used approximately 21% of the time. Etudes (*i.e., studies that teach specific*

musical/instrumental skills such as technique, articulation, etc.,) are the smallest of the five areas.

Approximately the same percentage of time is devoted to each of the five areas during home practice or band rehearsals. The students play significantly less on band music at home practice than at school rehearsal, and are involved significantly more on instrumental activities identified as "other". Practicing scales, etudes, and sight-reading are not significantly different during home practice and school rehearsals.

Table 1 The similarities/differences between the five Practice/Rehearsal Activities.

	Home Practicing		School Rehearsal					
	M %	SD	M %	SD	df	t	p	
Scales (%)	14.2	13.3	15.2	10.9	379	-.850	.3961	
Etudes (%)	6.4	12.0	5.7	8.6	378	.706	.4807	
Band Music (%)	45.6	29.8	56.3	22.4	378	-3.990	.0001	**
Sight-reading (%)	12.4	15.4	15.2	13.0	378	-1.939	.0532	
Other (%)	17.9	26.0	6.8	14.6	378	5.173	.0001	**

** $p \leq .01$

The means and ranks for the areas were used to evaluate the school performance (see Table 2, items 1-6) and other instrumental activities (items 7-10). The students participated most in **marching contests** and **parades** and least in *solo-ensemble* and *solos in public* (ratio: 6:1, 5:1, respectively). Note that participation in ensemble in public and concert festival were moderately low.

When the Other Instrumental activities were evaluated, private lessons and days after school for concert band (i.e., non-marching activity emphasizing instrumental skills) mean scores and rankings were low, both in respect for the sub-category of Other Instrumental activities, and for the total 10 areas. Church/community choir (i.e., a music activity but non-instrumental activity) and days after school for marching band were relatively high for both the sub-category of other instrumental activities and for all 10 areas.

Table 2 Mean scores and ranks for the six school Performance and four other Instrumental activities.

School Performance activity	M	Performance Rk	Instrumental Rk	Total Rk
1. Marching Contests (yrs)	3.7	1		1
2. Concert Festival (yrs)	1.6	3		5
3. Solo-Ensemble (yrs)	.6	5.5		8
4. Parades (yrs)	2.9	2		2
5. Solos /pubic (#/yr)	.6	5.5		8
6. Ensembles/public (#/yr)	.9			6
Other Instrumental Activity				
7. Marching Band (days/wk)	2.3		1	3
8. Concert Band (days/wk)	.6		3	8
9. Private Lessons	.5		4	10
10. Church/Community Choir (yrs)	2.0		2	4

Factor analysis was used to evaluate the 10 student activities collectively (i.e., school and other instrumental). Using the Orthogonal Transformation Solution-Varimax, solo-ensemble, solos in public, ensembles in public, and private lessons are identified and grouped into Factor 1 (see Table 3). Common characteristics for Factor 1 are mastery of musical fundamental skills plus individual performance activities. Days after school for marching band and for spring concert are grouped into Factor 2--both areas describe supervised activities after school. Marching activities are grouped into Factor 3, while church/community choir is the single area in Factor 4. Lastly, the number of years in concert festival is the single area in Factor 5--a group assessment area. Note the subtle difference between Factors 3 and 5. Factor 3 requires marching (the primary activity) plus music (a subordinate activity), while Factor 5 is exclusively music, requiring a band trip away from the school and excluding marching.

When comparing the five factors by weights, Factors 1 and 3 received the largest weights (wts=.260, .221, respectively), while Factor 5 received the lowest weight.

Table 3 The Oblique Solution Reference Structure-Orthotran/Varimax was used to organize the 10 instrumental activities.

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Weights (Oblique)	.260	.191	.221	.166	.148
Descriptors	***Music Fundamentals***	***After School***	***Marching***	***Singing***	***Group Assessment***
Marching Contests (yrs)	.205	.048	**.791**	-.128	.015
Concert Festival (yrs)	.018	-.054	-.006	.071	**.940**
Solo-Ensemble (yrs)	**.705**	-.021	9.7E-4	-.456	.287 *
Parades (yr)	2.6E-4	-.049	**.858**	.164	-.013
Solo/pubic	**.741**	-.026	.346	.220	.004
Ensembles/public(#/Yr)	**.543**	-.112	-.033	.340	-.321
Marching (days/wk)	.002	**.786**	.131	-.094	-.007
Spring Concert (days/wk)	.12	**.822**	-.139	.099	-.040
Private lessons (yrs)	**.685**	.271	.033	.026	-.004
Church/community Choir (yrs)	.113	.001	.038	**.873**	.099

* Although Solo-ensemble is not a primary contributor to Factor 5 (i.e., Factor 5 has essentially one strong area related to musical assessment), it is the second largest positive "r".

B. MAT3 SCORES (SUBTESTS AND GRAND TOTAL) AND CORRESPONDING PERCENTILE SCORES

1. Subtests and grand total MAT3 scores by school, state, and total sample.

There were 211 high school band students in six "good" rural Appalachian high schools who participated in the research project. There were 95 students in the three Kentucky band programs and 116 students in the three Tennessee programs. The Kentucky students' mean MAT3 scores were higher on ST2, ST3, ST4 and grand total MAT3 mean score (see Table 4), while Tennessee students scored higher on ST1.

The students' subtest and grand total MAT3 scores were converted to percentile scores. Kentucky students earned higher mean percentile scores on ST2, ST4 and the grand total score, and Tennessee students earned higher scores on ST1 and ST3.

Table 4 Mean scores (M) percentiles (%) on the MAT3 subtests (ST) and grand total (GT) for high school band students in 3 Kentucky (KY) and 3 Tennessee (TN) high schools.

	n	ST1		ST2		ST3		ST4		GT	
STUDENTS		**M**	**%**	**M**	**%**	**M**	**%**	**M**	**%**	**M**	**%**
KY1	27	11.2	**21**	9.8	**34**	8.9	**29**	9.3	**40**	39.2	**32**
KY2	39	12.2	**30**	10.1	**43**	10.0	**48**	10.8	**52**	43.1	**42**
KY3	29	14.1	**49**	10.3	**43**	8.3	**29**	10.4	**52**	43.1	**42**
M Students	95	12.5	**30**	10.1	**43**	9.2	**38**	10.2	**52**	42.0	**40**
TN1	17	13.2	**38**	8.7	**24**	8.5	**29**	9.7	**40**	40.1	**34**
TN2	53	12.2	**30**	9.4	**34**	9.4	**38**	9.3	**40**	40.3	**34**
TN3	46	13.8	**38**	9.8	**34**	9.0	**38**	10.3	**52**	42.9	**37**
M Students	116	12.8	**30**	9.4	**34**	9.1	**38**	9.8	**40**	41.1	**37**
MGT	35.1	12.7	**30**	9.7	**34**	9.1	**38**	9.9	**40**	41.5	**37**

2. Comparison: Instrumental Band Students Attending "good' Rural Appalachian High Schools with Randomly Selected and Nominated Students (*MI data obtained from an earlier high school study*).

Instrumental band students attending "good" rural Appalachian high schools were compared to instrumental students in an earlier Tennessee study (Bobbett, 1987). The earlier study compared students in "Outstanding" instrumental programs (*nominated programs*) with students in randomly selected instrumental programs. There were 10 high schools in the nominated sample (n=528 students), and 7 high schools participating in the random sample (n=127 students).

Table 5 illustrates that Appalachian students scored significantly lower than the Nominated students on all four subtests and grand total MAT3 score, and the Randomly selected students scored significantly lower than the Nominated students on ST1, ST3, ST4, and grand total score. In addition, note that there was no significant difference of any of the four subtests or grand total MAT3 score between the Appalachian and Randomly selected band students.

Table 5 The ANOVA was used to evaluate the four subtests and grand total MAT3 test scores for Appalachian, Random, and Nominated Students.

	Appalachian	Random	Nominated	F	p	Scheffe
n=	*211*	*127*	*528*			p≤.05
ST1	12.7	13.5	14.7	27.94	.0001	2,3
ST2	9.7	10.6	11.3	16.84	.0001	2
ST3	9.1	9.6	11.5	37.05	.0001	2,3
ST4	10.0	9.5	11.6	75.90	.0001	2,3
GT	41.5	43.0	49.1	64.43	.0001	2,3

Scheffe

1=Appalachian & Random
2=Appalachian & Nominated
3=Random & Nominated

Figure 1 illustrates that the Appalachian students scored lowest on ST1 (*Tonal Memory*), ST2 (*Melody Recognition*), ST3 (*Pitch Recognition*), and Grand Total MAT3 score, the Randomly selected students scored lowest on ST4 (*Instrument Recognition*), and the Nominated students scored highest on all subtests and grand total MAT3 score. Further, Appalachian students' MI might be arguably below Tennessee's state mean[3].

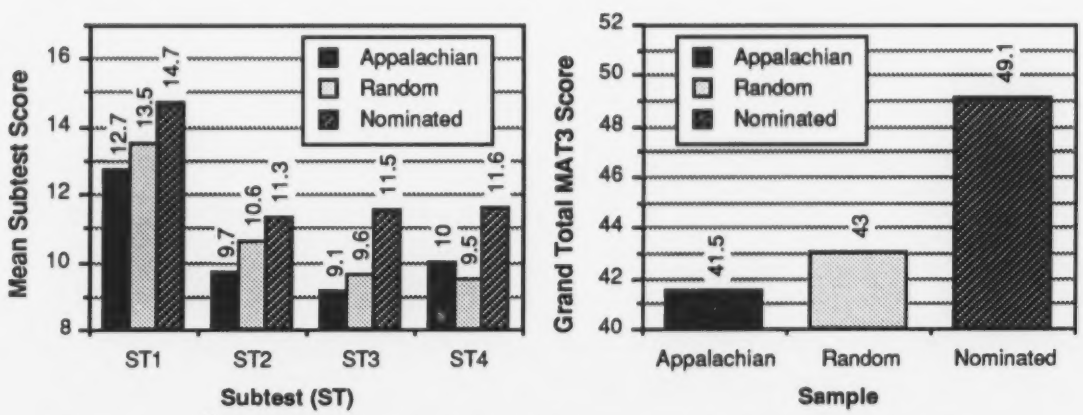

Figure 1 Four subtests and grand total MAT3 mean score for Appalachian, Random, and Nominated Students.

[3] There were approximately 300 instrumental programs in Tennessee, with 80 programs nominated as outstanding. The randomly selected programs were taken from the remaining 220 schools. Hence, it can be inferred that the mean of the randomly selected programs (220) was lower than the state mean (300). If the Appalachian students'MI is lower than the randomly selected programs, then it can be arguably lower than Tennessee's state mean.

C. INFERENTIAL STATISTICS: MAT3 with Survey Data

1. General Information, Family Activities, and Music/Academic activities compared to MAT3 scores.

The ANOVA (*three or more independent variables*), t-test (*two independent variables*) and Scheffe (see Table 6) were used to evaluate differences between each of the general information areas (*i,e., instrument, part, gender, grade, instrument ownership, instrument quality*) and the students' MAT3 mean score. The level of significance used for this study was .05.

There were no significant differences between the woodwind, brass, and percussion students' ST1, ST2, ST4 and grand total MAT3 mean scores, but there was a significant difference between the brass and percussion students' ST3 scores. The brass students received the highest grand total MAT3 mean score and percussion students scored lowest. The students playing 1st part scored highest on ST1, ST2, ST4, and on the grand total MAT3 score. There was a significant difference between the students playing the 1st part and the 3d part and a significant difference between the students playing 2nd part and 3rd part for ST3, ST4, and the grand total MAT3 scores. Males scored higher, but not significantly higher on ST3 and ST4. Females scored significantly higher on ST2, and higher, but not significantly higher, on ST1 and grand total MAT3 scores.

Students in the 12th grade scored significantly higher than the 9th grade students on ST2, ST4, and grand total MAT3 score, and students in the 11th grade score significantly higher than the 9th grade students on ST4. Students in the 9th grade scored lowest on ST1, ST3, ST4 and grand total MAT3 score and12th grade students scored highest on all four subtests and grand total MAT3 score.

Students who owned their band instruments scored higher on ST1, ST2, ST3, and grand total MAT3 score, while students using school instruments score lowest on all subtests and grand total MAT3 score. Students who owned their band instruments scored significantly higher on ST4 than students who used school-furnished instruments. There was no significant difference between students playing professional-line instruments (most expensive) and students playing intermediate or beginner instruments. Students playing professional instruments scored slightly higher on ST1, ST4, and grand total MAT3 score, while students playing beginner instruments scored lowest on all four subtests and grand total MAT3 score.

There was no significant difference between the amount of money spent per year on band (*i.e, instrument repair/fees/accessories*) and MAT3 scores. The students spending more than $150/year scored neither the highest nor lowest on any of the four subtests or grand total MAT3

score. The expenditures per year for students scoring highest on the following subtests were: *ST1*--$25, *ST2*--$150, *ST3*--$100, *ST4*--$50, and *grand total*--$150. The students scoring the lowest on ST1 score spent $150 per year, on ST2 spent $100 per year, while the students who scored lowest on ST3, ST4 and grand total MAT3 score spent no money per year. The modes for money spent on band-related expenses were $10 and $25 per year.

Table 6 The differences and similarities for the four subtests and grand total MAT3 scores for the Instrument played, Instrumental Part, Gender, Grade, Instrument Ownership, Instrument Quality, quantity of money spent in band per year.

Instrument

Scheffe Items =	*(1)* **Woodwind**	*(2)* **Brass**	*(3)* **Percussion**	**F**	(2-tailed) ***p***	(p≤.05) **Scheffe**
n=	*99*	*75*	*34*			*(3-variables)*
ST1	12.7	12.4	13.0	.273	.7614	–
ST2	9.7	10.1	8.7	2.618	.0754	–
ST3	8.9	10.0	8.1	4.902	.0083	3
ST4	10.1	9.9	9.6	.721	.4873	–
GT	**41.4**	**42.5**	**39.5**	**1.710**	**.1835**	–

Instrumental Part

Scheffe Items =	*(1)* **1st Part**	*(2)* **2nd Part**	*(3)* **3d Part**	**F**	(2-tailed) ***p***	(p≤.05) **Scheffe**
n=	*108*	*50*	*35*			*(3-variables)*
ST1	13.0	12.3	11.6	2.123	.1225	–
ST2	10.1	9.7	9.1	1.357	.2599	–
ST3	9.4	9.4	7.7	5.108	.0069	2,3
ST4	10.2	10.1	9.1	4.875	.0086	2,3
GT	**42.7**	**42.1**	**37.6**	**5.951**	**.0031**	2,3

Gender

Scheffe Items =	*(1)* **Male**	*(2)* **Female**	***t-test*** ***t***	**F**	(2-tailed) ***p***	(p≤.05) **Scheffe**
n=	*105*	*104*				*(2-variables)*
ST1	12.5	12.9	*-.585*	.342	.5591	—
ST2	9.3	10.2	*2.105*	4.432	.0365	Yes
ST3	9.5	8.9	*1.25*	1.562	.2128	–
ST4	10.0	9.9	*.323*	.104	.7469	–
ST5	**41.3**	**41.8**	***-.508***	**.258**	**.6118**	--

Grade

Scheffe Items =	*(1)* **9TH**	*(2)* **10TH**	*(3)* **11TH**	*(4)* **12TH**	**F**	(2-tailed) ***p***	(p≤.05) **Scheffe**
n=	*62*	*65*	*52*	*30*			*4-variables*
ST1	11.7	12.7	13.1	13.6	1.909	.1292	–
ST2	9.2	9.3	10.1	11.1	3.281	.0219	3
ST3	8.9	8.8	9.4	9.9	1.029	.3808	–
ST4	9.3	10.0	10.5	10.6	5.329	.0015	2,3
GT	**39.0**	**40.8**	**43.0**	**45.1**	**5.228**	**.0017**	**3**

Instrumental Ownership (*i.e., student's instrument*)

Scheffe Items =	*(1)* **School**	*(2)* **Self**	*(3)* **Rent**	**F**	(2-tailed) **p**	(p≤.05) **Scheffe** *3-variables*
n=	*79*	*126*	*3*			
ST1	13.1	12.5	9.3	1.543	.2161	–
ST2	9.6	9.9	8.3	.670	.5127	–
ST3	9.0	9.3	6.3	1.317	.2701	–
ST4	9.5	10.2	9.3	3.464	.0332	1
GT	**41.2**	**41.9**	**33.3**	**1.880**	**.1553**	--

Instrument Quality

Scheffe Items =	*(1)* **Professional**	*(2)* **Intermediate**	*(3)* **Beginner**	**F**	(2-tailed) **p**	(p≤.05) **Scheffe** *3-variables*
n=	*74*	*57*	*43*			
ST1	13.2	12.5	12.4	.623	.5373	–
ST2	9.6	10.0	9.6	.240	.7866	–
ST3	9.2	9.5	8.5	1.308	.2732	–
ST4	10.1	10.0	10.0	.148	.8640	–
GT	**42.2**	**42.0**	**40.6**	**.573**	**.5650**	--

Students' Money Spent per year

	Seven Monetary Categories							Scheffe *7 variables*
	$0	**$10**	**$25**	**$50**	**$100**	**$150**	**$More**	
n=	*28*	*46*	*46*	*36*	*15*	*9*	*17*	--
ST1	12.5	12.6	13.1	12.9	12.6	*12.2*	12.4	--
ST2	**9.9**	9.7	9.5	9.5	*9.3*	11.2	9.9	--
ST3	8.6	9.5	8.9	9.4	10.2	**9.9**	*7.6*	--
ST4	*9.4*	**10.1**	10.0	10.2	9.8	*9.6*	**10.1**	--
GT	*40.5*	41.8	41.6	**42.0**	41.9	**42.9**	*39.9*	--

Scheffe Code (3 variables)	**Scheffe Code (4 variables)**	
1 = 1 & 2	1 = 1 & 2	4 = 2 & 3
2 = 1 & 3	2 = 1 & 3	5 = 2 & 4
3 = 2 & 3	3 = 1 & 4	6 = 3 & 4

---

2. Graphic and Permutation Analysis: Instrumental Parts, Grade Level, Instrument Ownership, and Instrument Quality

Data represented in Table 6 do not reflect all the possible relationships. Graphs depicting the relationships among the different groups for Instrumental Parts, Grade Level, Instrument Ownership, and Instrument Quality were developed. Figures 2 and 3 illustrate the perspective of ordering and corresponding permutation analyses.

In the Instrumental Parts graphs (see Figure 2), 1st-part instrumentalists have the largest mean subtest and grand mean MAT3 scores and the 3rd-part instrumentalists have the lowest. The permutation for three items ordered from large to small is 1 in 6; stated differently, 17% of the

time the three items will be arranged and ordered from largest to smallest, and 83% of the time they will not be ordered correctly. Although there was no significant difference for the mean scores for ST1 or ST2, both subtests were ordered from large to small (*i.e., the 1st-part students' subtests and grand total MAT3 mean scores were larger than the 2nd-part students, and the second part students scores were larger than the 3rd-part students*).

In the Grade Level graphs (*i.e., 9th - 12th grade*), there was a significant difference between grades for ST2, ST4, and GT. The permutation of four items ordered from small to large is 1 in 24, or 4% of the time the items will be ordered from small to large, and 96% of the time they will be ordered differently. For ST1, ST2, and ST4, the four grades were ordered from lowest to highest, but for ST3, the 9th and 10th grade students scored lower than the 11th or 12th grade students. Note the relatively equal intervals of approximately 2 points per grade for the grand total mean scores between the 9th, 10th, 11th, and 12th grade students.

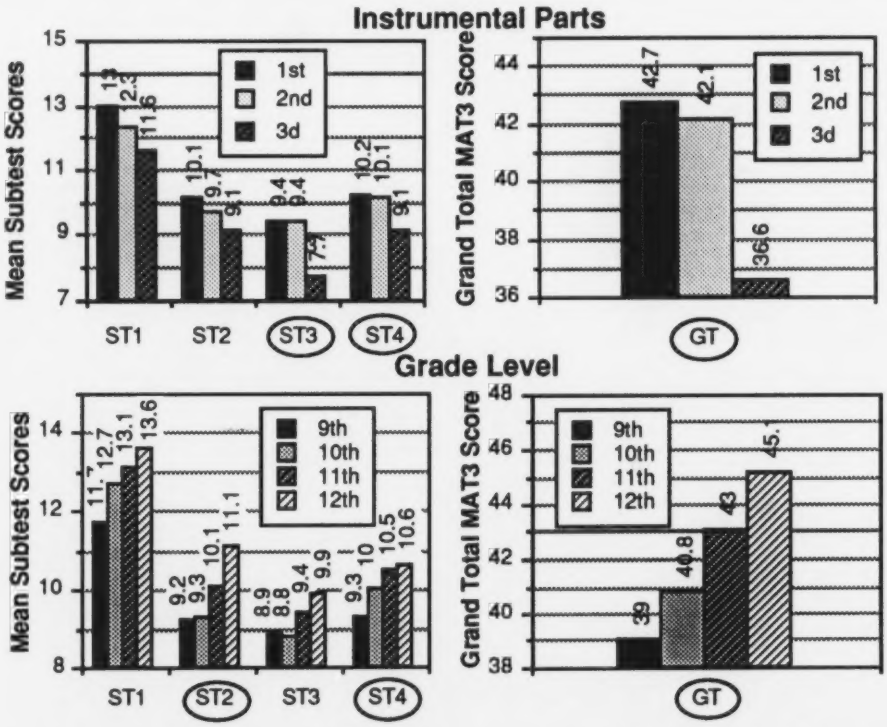

Figure 2 The four subtests and grand total MAT3 scores by Instrument Part and by Grade Level.
Circle = Significant difference between groups (p≤.05).

The graph of Instrument Ownership (see Figure 3) illustrates that ST4 is the single subtest where there is a significant difference between groups (*i.e., school-owned instruments and student-owned instruments*). The graphs also illustrate that, generally, students who own their instruments score higher than students who use school-owned instruments, who in turn score higher than students using rented instruments. Of the four subtests and grand total MAT3 mean scores, STI is the single exception--students using school instruments scored higher than either the students who owned their instrument or used rented instruments. Three of the four subtests (ST2, ST3, and ST4) and grand total MAT3 mean scores students that owned their own instrument scored highest, and students who rented their instruments scored lowest. (i.e., when three items are ordered in a specified order, 17% of the time they will be ordered in that specified manner and 83% of the time they will be ordered differently).

The graph for the quality of the instrument played by the student shows no significant difference between the students playing professional-, intermediate- or beginner-line instruments. Note that the students playing intermediate-level instruments scored highest on ST2 and ST3, and students using professional instruments scored highest on ST1 and ST4, and students that play beginner instruments scored lowest on all four subtests and for the grand total MAT3 score. In addition, note the very small difference between the grand total MAT3 score for the students playing professional instruments and the students who play intermediate instruments (*0.2 mean difference--the smallest difference between subgroups for the four different graphs in Figures 2 and 3*).

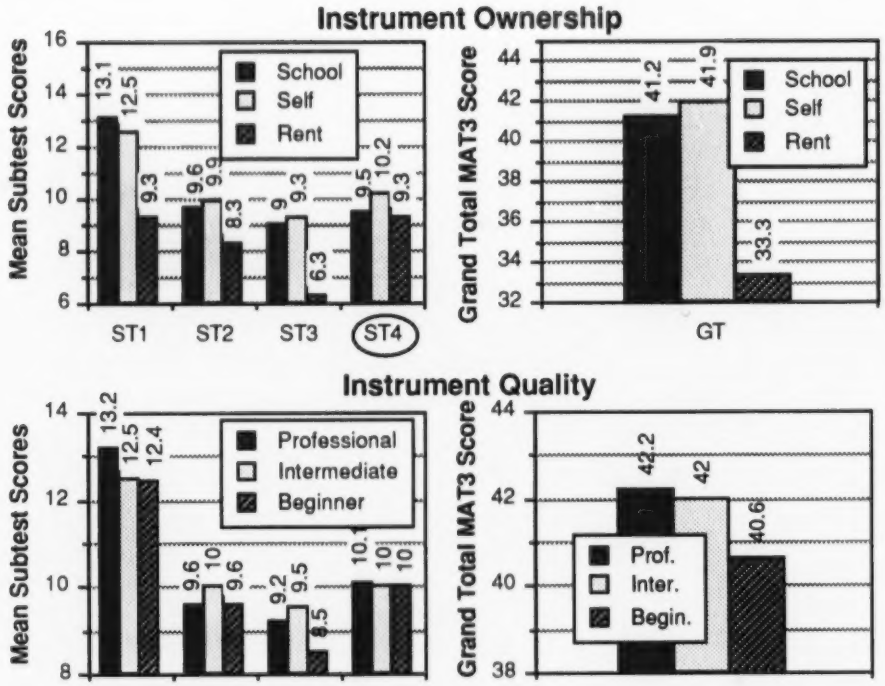

Figure 3 The four subtests and grand total MAT3 scores by Instrument Ownership and by Quality of Instrument.
Circle = Significant difference between groups ($p \leq .05$).

D. CORRELATION ANALYSIS

1. Correlation and Partial Correlation Analysis between MAT3 scores and Family Areas

The Pearson Product Moment was used to evaluate students' grand total MAT3 score and the 10 family activities (see Table 7). There was a significant negative correlation between the student's MAT3 score and: (1) the number of children in the student's family ($r=-.254$), and (2) the number of hours the student helped the parent around the house ($r=-.179$).

There was a positive correlation between the number of years the father attended college and the number of years the mother attended college ($r=.369$). Also, there was a positive correlation between hours the student helped the parents around the house and: (1) the number of children in the family ($r=.179$), (2) the number of hours the student watched television per week ($r=.180$), and (3) the number of children in the family ($r=.309$). Additionally, there was a positive correlation between the furthest number of miles traveled from home and: (1) number of children the the family ($r=.197$), (2) the number of hours the student helps the parents around the house

(r=.264), and (3) the number of states the student has visited (r=.426).

There was a significant negative correlation between time spent traveling to school and the number of years the father and mother attended college (r=-.192, -.196, respectively) *(i.e., the more the college the less time the student spends traveling to school)*, the number of years of college for the mother and the number of hours the student helps the parents around the house (r=-.196), the number of states the student has visited and the number of hours the student sleeps per night (r=-.242), and the miles the student has traveled from home and the hours the student sleeps per night (r=-.208).

Table 7 Pearson Product Moment correlation matrix evaluating the Instrumental Band Students' MAT3 scores and the 10 family attributes/activities.

	GT MAT3	College Father Yrs	College Mother Yrs	Breakfast #/wk	Children # /Family	TV Hr/wk	Parents Hr/wk	States #	Sleep Hr/night	Travel Min.	Miles #
GT/MAT3	1										
Father	-.035	1									
Mother	.096	.369	1								
Breakfast	.017	-.017	.017	1							
Children	-.254	.140	-.020	-.098	1						
Television	-.090	.139	-.034	-.042	.037	1					
Parents	-.179	-.085	-.196	.064	.179	.180	1				
States	.020	-.016	.053	.033	.309	-.011	.071	1			
Sleep	-.110	.013	-.101	.006	.000	.143	.113	-.242	1		
Sch. travel	.022	-.192	-.196	-.042	-.109	-.001	-.076	-.109	-.008	1	
Miles	.008	.047	.024	.014	.197	.059	.264	.426	-.208	-.048	1

Underline = Significant difference between groups

Guttman's partial correlation (see Table 8) was used to evaluate the contribution that 10 family activities have to the development of the students' MAT3 score. Using the criteria of one or more percent of influence, the number of years the father or mother attended college, number of breakfasts per week, amount of television per night, number of states visited, number of hours slept per night, travel time to school in the morning, or furthest number of miles traveled did not contribute to the students' MAT3 score. The two factors with the largest negative influence on MI were the number of children in the family (-5.7%) and the number of hours the student helped parents around the house per day (-1.4%). The combined items influenced MAT3 scores by 8.4% : 7.1% represented negative indicators, and 1.3% represented positive indicators.

Table 8 Guttman's partial correlation was used to compared the 10 family indicators to MAT3 growth.

	Partial Correlation GT/MAT3		Negative/positive levels of influence	
	r	r^2	(-)	(+)
Father/ years in College	-.026	.000	–	–
Mother/ years in College	.061	.003	–	.3
Breakfast/ number of days/week	-.006	.000	–	–
Children in family	-.240 ***	**.057**	5.7	–
Television	-.047	.002	.2	–
Help Parents / hrs per week	-.120	**.014**	1.4	–
States visited	.061	.003	–	.3
Hrs sleep per night	-.054	.003	.3	–
Travel Time to school in morning	.002	.000	–	.2
Total percentage of influence		**.084**	**7.6%**	**.8%**

*** p≤.01

2. Correlation Analysis between MAT3 and Academic/Musical Activities

The Pearson Product Moment was used to compare the students' three family indicators and MAT3 scores (see Table 9). There was no significant correlation between number of years in band, number of minutes studying academic (non-music) work, and the number of minutes practiced per day and the student's MAT3 score. The only significant correlation was between the number of minutes studied on non-music course work and instrumental practicing (r=.250, p≤.01).

Table 9 Pearson Product Moment correlation was used to compare three academic indicators and the instrumental band student's grand total MAT3 score.

	GT MAT3	Years in Band	Minutes studying non-music	Minutes practicing music
GT/MAT3	1			
Years in band	.141	1		
Minutes studied/non-music	.018	-.065	1	
Minutes practicing music	.053	.016	**.250** **	1

** p≤.05

3. Correlation, and Partial Correlation Analysis between MAT3 and Home Practice Activities/Band Rehearsal Activities

Home Practice Activities and Band Rehearsal Activities were evaluated using both the Pearson Product Moment correlation and Guttman's partial correlation (see Table 10). The students practicing **scales** at home was the only significant correlation with the grand total MAT3 score. All other practice activities along with all rehearsal activities were not significantly correlated with the grand total MAT3 score. Guttman's partial correlation was used to identify the level of influence for each of the five practice activities and each of the school rehearsal activities. Next, positive and negative levels of influence were grouped and summed. Scales practiced at home was the only independent variable that was positive (+5.6%), whereas all other activities (both practice and rehearsal) were negative (-8.3%). Since the sum of the influence between both practice and rehearsal activities was 13.9%, the activities that contribute to MAT3 growth that were not identified by these five activities represent 86.1%.

Table 10 Pearson Product Moment, Guttman's partial correlation, and percentage of influence evaluated for the five home practice activities and five school rehearsal activities.

	MAT3 Pearson Product Moment	Guttman's Partial Correlation		Percentage of Influence	
Home Practice	r	r	r^2	(+)	(-)
Scales	.184 **	.125	.056	5.6	--
Etudes	.089	-.032	.001	--	.1
Band M.	-.093	-.150	.023	--	2.3
Sight-reading	-.051	-.106	.011	--	1.1
Other	-.070	-.105	.011	--	1.1
Band Rehearsal					
Scales	-.053	-.129	.017	--	1.7
Etudes	.050	-.044	.001	--	.1
Band Music	.118	-.047	.002	--	.2
Sight-reading	-.118	-.121	.015	--	1.5
Other	-.117	-.108	.002	--	.2
Total percentage of influence				**+5.6%**	**-8.3%**

** $p \leq .05$

---

4. Correlation Analysis between Top, Average, and Bottom students (i.e., grand total MAT3) and General, Family, and Academic/Music activities.

The students' MAT3 scores were converted to z-scores. The students with a z-score larger than one were categorized as"top" students, the students with z-scores between a plus one and

a minus one z-score were categorized as "average", and students with a negative one z-score or larger were categorized as "bottom" students. The ANOVA was used to compare the mean activity score for the three categories (see Table 11). Generally, most of the areas were not significantly different between categories (i.e., top, average, and bottom).

There was a significant difference for 5 of the 25 areas examined. The "top" students had a significantly higher mean grade level than the "average" students and significantly higher mean grade level than the "bottom" students ($p \leq .01$), significantly fewer children in the family than the bottom category, and significantly larger mean number of years in band than the bottom category. In addition, the top category spent significantly more time practicing scales at home than the bottom category, significantly more time working on etudes than the average category, and significantly less percentage of time on sight-reading than the average category.

In addition, note the areas with the smallest differences between the top, average, and bottom instrumental band students. The areas with the largest "p" included: number of hours the student **sleeps** per night ($p \leq .96$), number of hours per night the student watched **TV** ($p \leq .92$), number of hours the student spends **helping parents** per week ($p \leq .92$), percentage of time rehearsing **etudes**, the amount of **Money** spent per year ($p \leq .73$), and the percentage of time spent **sight-reading** during home practice ($p \leq .72$)--one general activity, three family activities, and two music/academic activities.

Note that practicing etudes at home promotes MI, but rehearsing etudes during school does not. Also, of the five identified rehearsal activities, none significantly promote MI, but rehearsing sight-reading detracts from MI.

Table 11 The ANOVA was used to evaluate the "Top", "Average", and "Bottom" Instrumental Band Students' by the general, family, and music areas.

	Scheffe areas:	*1*	*2*	*3*			
		Top	**Average**	**Bottom**	**F**	**p**	**Scheffe**
		M	**M**	**M**			
General Information							
Grade level		**10.8**	**10.2**	**10.0**	6.706	.0015 ***	1,2
Money spent per year (dollars)		56.4	47.0	50.1	.319	.7269	
Family activities							
No. years father attended college		1.5	1.4	1.5	.809	.4466	
No .years mother attended college		1.5	1.4	1.6	1.592	.2061	
No. times they eat breakfast / wk		4.2	4.4	3.6	1.123	.3271	
No. children in family		**2.2**	2.5	**2.9**	3.481	.0327 **	2
No. hours per night watching TV		2.8	2.7	1.9	.082	.9215	
No. hours spent helping parents/wk		1.9	2.1	2.1	.089	.9151	
No. states visited		6.3	8.1	7.2	1.335	.2654	
No. hours sleep/night		7.4	7.4	7.4	.045	.9558	
No. minutes traveling to school / morning		18.3	19.2	23.6	1.988	.1397	
Farthest no. of miles travel		1121	1193	1008	.523	.5934	
Academic/music activities							
No. years in band		**5.8**	5.1	**4.8**	3.188	.0433 **	2
No. minutes studing/night		51.7	47.7	45.9	.470	.6256	
No. minutes practicing/night		30.9	25.0	27.9	.821	.4414	
Practice/scales (%)		**18.3**	14.5	**9.3**	3.645	.0281 **	2
Practice/etudes (%)		10.7	5.3	6.9	2.405	.0932 *	
Practice/band music (%)		37.7	47.5	45.5	1.285	.2793	
Practice/sight-reading (%)		10.2	12.7	12.8	.333	.7174	
Practice/other (%)		15.9	19.0	23.1	.805	.4485	
Rehearsal/scales (%)		15.3	14.6	17.5	.948	.3891	
Rehearsal/etudes (%)		5.2	6.0	5.0	.221	.8021	
Rehearsal/band music (%)		62.3	55.9	52.4	1.68	.1891	
Rehearsal/sight-reading (%)		**9.3**	**16.8**	14.2	4.443	.0130 **	1
Rehearsal/other (%)		4.1	6.7	10.1	1.454	.2361	

* p≤.10
** p≤.05
*** p≤.01

Scheffe code: 1 = 1 & 2
2 = 1 & 3
3 = 2 & 3

V. CONCLUSIONS

Student activities and involvements influence student outcomes. Some suggest that musical growth is accidental or beyond evaluation procedures while others suggest that it is linked to specific activities, disciplines, and experiences. Evaluating and understanding student musical excellence is a two-fold process. First, behaviors associated with excellence need to be

examined, and second, student outcomes need to be compared to these activities and to other known identifiable benchmarks. Rural band students participate in band, but what are the characteristics of their band programs, and what are primary and secondary influences on the students' musical growth?

The socio-economic conditions are linked to student's musical outcome. The typical instrumental band student attending a "good" rural Appalachian high school has relatively well-educated parents, has high academic expectations (*most want to continue their education past high school*), and has parents willing and interested in making the financial investment in their children's educational materials (*i.e., 43% of the students play professional instruments that are several times more expensive than beginner-line instruments*) and providing extra-curricular enrichment experiences (*the typical student has visited seven states*). Appalachian band students are not educationally sheltered or financially deprived.

Using typical superficial indicators such as program size, instrumentation, gender composition, and types/varieties of musical activities, these students have no glaring idiosyncrasies or deficiencies. The students in this study participate in band programs of moderate size, with a balanced instrumentation (*woodwind-brass-percussion*) comprised of experienced members (5.1 yrs/student). In addition, there appears to be an equal balance between the number of male and female participants, and a reasonable participation for students in grades 9-12.

Collectively, the school administration, band director(s), and greater community appear to have a two-fold mission for the students participating in these band programs. The band class should be a fun activity for the students and the band should be involved in activities that entertain the student body, school and community. In short, the band represents a major part of the school's public relations. Many factors contribute to this conclusion. The band programs emphasize parades, marching contests, and other band activities related to these types of musical activities. In addition, the data show that teachers and students emphasize sight-reading and band music, but do not emphasize music skills representing the fundamental components of developing musical independence.

There are subtle indicators contributing to the notion that the mission of these band programs is for fun and entertainment. Eighty-seven percent of all performances (Bobbett, 1990a) are marching activities (*i.e., an entertainment-related activity*). In addition, there is a dis-proportionately large percentage of students playing the 1st part, and a very small percentage of students playing the 3d or harmony parts (it is fun for most students to play the melody and be

recognized as leaders by both peers and their audience). Naturally, it is not as much fun for a member of the supporting cast to play the harmony or counter-point to the melody. This instructional policy might promote the student's enthusiasm for music, but it does not teach important educational/social values such as discipline, sharing, or promoting an accurate musical understanding of instrumental music.

Appalachian band directors and their instrumental students de-emphasize the promotion and development of musical skills. The students do not typically participate in solos or ensembles in public, take private lessons on their band instruments, or participate in band musical evaluations (*concert festival*). The musical fundamentals that develop musicianship--scales, etudes, solos--are de-emphasized during home practice and during band. Instead, they are "exposed" to music through an emphasis on band music or sight-reading, but are not expected to master the music skills necessary to develop MI.

Sight-reading has been widely used and overly promoted as a method of student evaluation (*chair placement in secondary/post-secondary instrumental organizations, or one component of Concert Festival)* and a means to develop musical skills *(band rehearsals/home practicing)*. Music educators have been greatly influenced by the Watkins-Farnum Performance Scale (1954,1962), the ONLY American, or English language musical achievement test that promotes instrumental sight-reading.

This study suggests that promoting sight-reading adversely influences a student's musical growth. Further, the study suggests that students' practice habits strongly parallel their band director 's rehearsal activities. Although fun and entertaining (*a possible school mission*), sight-reading does not positively promote musical mastery or development of MI. Since the development of musicianship (*musical independence*) requires methodical, exacting, and intense musical discipline, there is little room for superficial musical experiences. Many concert performers consider themselves "poor" sight-readers and readily dismiss the merits of sight-reading as a legitimate music activity (*no major orchestra audition requires sight-reading*); yet, why does music education use sight-reading as an important learning activity or method to assess musical skills? Admittedly, sight-reading demonstrates some of the basic musical skills such as key-signature and rhythm. Unfortunately, it ignores more advanced skills such as "even" technique, sonority, phrasing, intonation, and artistry. These advanced skills are learned through musical refinement and hard work! Being a good typist or speller is not synonymous with being a good author. Likewise, being a good sight-reader does not equate to being a good musician!

Was Da Vinci ever evaluated on how fast he painted "The Last Supper" or "Mona Lisa", Michelangelo on how fast he sculpted the "David" or "Pieta", or Heifetz evaluated on how fast he

sight-read a Paganini Caprice? Recently, a community band director defending the use of sight-reading stated: ". . . *if you do not sight-read, aren't you limiting the music you practice?*" The notion of sight-reading is grossly misunderstood!

Colwell's MAT3 is more than an excellent musical achievement test for either secondary or post-secondary students. It can be used to glean and evaluate important educational observations from the participant data. The MAT3 was used to successfully evaluate student outcomes. In addition, related music issues such as instrument ownership, grade level growth, gender, time-on-task, national academic achievement tests, chair placement, practice/rehearsal activities, music activities, contributing family environment indicators, and the school's mission for instrumental music were also directly or indirectly evaluated. This information collectively can enhance the understanding of student and band director (*professional educator*) about musical "selectivity." Musical independence is not a mystery --this type of understanding allows musicians to know what and how to develop musical independence.

Students generally develop MI at a measurable rate each year (see Figure 2). Other studies indicate that post-secondary students increase their MI from freshman to graduate school (Bobbett, 1990c, 1991a). Although growth is being identified and measured, few of the factors that positively influence MI growth are being identified. More puzzling is the observation that there were no positive factors identified that related to school rehearsals, and only one factor (*scales*) related to home practicing. The students are learning and growing, but what influences the MI growth?

Wasted student resources is an important educational issue. Students spend 19 hours a week watching television, but spend 5 .6 hours per week studying academic course work and 3 hours per week practicing their instrument. Apparently, although the students are industrious (*they help parents around the house15 hours per week*), they are not academically overworked or dedicated, driven musicians! Are activities associated with hard work de-emphasized and if so, are the student's musical resources being wasted? Since the student's practice habits parallel what they are taught at school, they work on the less effective activities such as band music (Bobbett, 1991a) and sight-reading, and de-emphasize scales, etudes, solos, private lessons, and solos in public. Note that all of the de-emphasized factors can be controlled by the student, and indirectly, by the band director. Secondly, if there is no significant difference between students playing intermediate and professional instruments, might the money spent on professional instruments be better spent on private lessons?

The students and teachers in these "good" rural Appalachian schools appear not to value the

arts (Bobbett, 1990d, 1991b). Interestingly, the instrumental band students' MI parallels the school's general expectations for the arts (Bobbett, 1991c). The data lead the authors to a critical question: With all the family advantages such as parents with post-secondary education who have high academic expectations for their children, why are these students so musically weak? Maybe it would be wrong to categorize these programs as musically weak and assume that skills are **not** the primary purpose of education. Maybe they are fulfilling the schools' music mission by just having fun!

VI. CAVEAT

There should be an aspect of the educational process that is fun and exciting for the student. A student learning and mastering any meaningful skill, whether history, math, or a foreign language, can be a rewarding experience. It is also important for students to experience sharing with other students or with community members what they have learned in the education process.

Further, it is important to remember that "band" is a certified course that is recognized and funded with state money. Each student receives a credit approved by the state department that is applied toward the student's graduation. Through the certification process, the state and the school assumes that skills need to be mastered.

Accountability is a major issues in education. One of the assumptions in *America 2000* is that academic excellence is linked to specific, identifiable, and measurable skills. Should a music course (band) be treated differently than any other academic course? Standards of excellence need to be set and measured. Without accountability, there is no creditability. Now, in rural Appalachian high schools, the" tail is wagging the dog." The fun and entertainment dictates or controls a major portion of the music curriculum. A little salt seasons food, but too much salt makes food bitter. Not every band student will be or should be a professional musician, but alternatively, today's educational process should not become an academic environment where the student becomes musically impotent because of the heavy emphasis on fun and entertainment.

VII. REFERENCES

Bobbett, G. C. (1987). Identifying music achievement for students participating in outstanding instrumental programs (Doctoral dissertation, University of Tennessee-Knoxville, 1987).

Bobbett, G. C. (1989). Postsecondary programs' musical independence and related academic/musical experiences. Annual Meeting of the Mid-South Education Research Association, Little Rock, AK (ERIC ED 313 449).

Bobbett, G. C. (1990). A profile of rural Appalachian band directors and their band programs, Annual Meeting of the Mid-South Education Research Association, New Orleans, LA (ERIC RC 018 005).

Bobbett, G. C. (1990). "Evaluating Students Musical Growth: Freshman to Graduate Level," Tennessee Education, Vol. 19, No. 3.

Bobbett, G. C., Henry, Kenneth J., & French, Russell L. (1990). A study of six Appalachian high schools, Annual Meeting of the Mid-South Education Research Association, New Orleans, LA (ERIC ED 326 559).

Bobbett, G. C., Henry, Kenneth J.,& French, Russell L. (1990). "Measuring Educational Perceptions in Rural Appalachian School Districts." Tennessee Education, Knoxville, TN, Vol. 20, No. 1.

Bobbett, G. C., Henry, Kenneth J., & French, Russell L. (1991) A Study of "Goodness" in Six Rural Appalachian High Schools, Annual Meeting of the American Educational Research Association (AERA), Chicago, IL (ERIC RC 018 227).

Bobbett, G. C., & Dorothy, F. Wayne. (1991). Postsecondary student's musical independence and related high school/college experiences, Annual Meeting of the National Band Association (NBA), Chicago, IL. (ERIC EC 300 312).

Bobbett, G. C., Henry, Kenneth J., & French, Russell L. (1991). Student, teacher, and business leader perceptions of academic, work-related, & personal skills in rural Appalachian communities, Annual Meeting of the Mid-South Education Research Association, New Orleans, LA (ERIC ED 326 568).

Colwell, Richard (1970). Musical achievement test 3 and 4. interpretive manual. City: Follett Educational Corporation.

Stephens, E.R. (1988). The changing context of education in a rural setting. Charleston, WV: Appalachian Education Laboratory.

Watkins, John, and Farnum Stephen E. (1962). Watkins-Farnum Performance Scale. Winona: Hal Leonard Music.